

REMARKS

Claims 1-12 and 19-21 are pending in the present Application. Claims 11-18 and 20 –21 have been withdrawn without prejudice, Claim 1 has been amended, Claim 3 has been cancelled, leaving Claims 1- 2, 4-10 and 19 for consideration upon entry of the present Amendment.

Claim 1 has been amended to better define the invention. Support for this amendment can at least be found in Claim 1 as originally filed as well as in Paragraph [0016] as originally filed.

No new matter has been introduced by these amendments or new claims. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Elections/Restrictions

Claims 1-12 and 19-21 are pending in the present application and subject to a restriction requirement. The Examiner contends that:

- Group I. Claims 1-10 and 19, drawn to a nickel alloy with molybdenum, classified in class 420, subclass 448.
- Group II. Claims 11 and 20, drawn to a nickel alloy with tungsten, classified in class 420, subclass 448.

Pursuant to 35 U.S.C. 121, the Examiner requires restriction between Groups I and II. (Office Action dated 6/9/2006, page 2)

During a telephone conversation between the Examiner and David Rodrigues on 5 June 2006 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10 and 19. Applicants hereby affirm the election to prosecute Group I, with traverse. Claims 11 and 20 have been withdrawn from further consideration by the Examiner pursuant to 37 CFR 1.142(b). (Office Action dated 6/9/2006, page 3) This election is being made without prejudice to Applicants' rights with respect to Claims 11 and 20 of Group II, including the right to file divisional application(s) thereon.

Withdrawn Claim

Claim 12 has been withdrawn without prejudice since it dependent upon another withdrawn claim, namely Claim 11.

Amended Claims

Claim 1 has been amended to better define the invention. The claim has been amended by the incorporation of a) about 0.01 to about 0.2 weight percent zirconium, as well as by the incorporation of b) and wherein the atomic ratio of aluminum to titanium is about 0.5 to about 1.5.

Support for a) can be found in paragraph [0023] where it is stated that “Zirconium may also added in amounts of less than or equal to about 0.2 wt.%, of the nickel-containing alloy. Zirconium may be substituted with hafnium if desired. An exemplary amount of zirconium is about 0.01 wt.%, of the nickel-containing alloy”. Combining the two limits found for zirconium in the paragraph one would arrive at the claimed limitation for zirconium.

Support for b) can be found in claim 3 as filed.

The limitation pertaining to molybdenum is removed.

Claim Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 1-10 and 19 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the Specification in such a way as to reasonably convey to one skilled in relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. (Office Action dated 6/9/2006, page 3) Applicants respectfully traverse this rejection.

In making the rejection, the Examiner stated “the specification does not disclose ‘about 0.99 to about 1.09 weight percent molybdenum’.” (Office Action dated 6/9/2006, page 3)

This rejection is moot as the Applicants have canceled the amendment.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-7 and 19 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 5,240,491 to Budinger et al. (hereinafter Budinger). (Office Action dated 6/9/2006, page 4) Applicants respectfully traverse this rejection.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

The present application is directed to and claims a nickel-containing alloy comprising about 1.5 to about 4.5 weight percent aluminum; about 1.5 to about 4.5 weight percent titanium; about 1.2 to about 3 weight percent niobium; about 14 to about 28 weight percent chromium; about 0.01 to about 0.2 weight percent zirconium; with the remainder being nickel, and wherein the atomic ratio of aluminum to titanium is about 0.5 to about 1.5. (see Claim 1)

Budinger teaches a series of brazing material for brazing superalloy substrates at effective brazing temperatures about 2300°F. (Abstract) Budinger teaches a number of different compositions that comprise some or all of the following elements Al, Ti, B, C, Co, Cr, Hf, Si, Mo, W, Nb, Ta, Ni, Y and Re. (see Tables in the patent). However none of the compositions described by Budinger comprise a zirconium. In addition, Budinger does not teach compositions wherein the atomic ratio of aluminum to titanium is between 0.5 and 1.5. For these reasons at least, Budinger does not teach all elements of the claimed invention and hence cannot anticipate the claimed invention. Applicants respectfully request a withdrawal of the § 102(b) rejection over Budinger and an allowance of the claims. Reconsideration and withdrawal of this rejection are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 8-10 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 5,240,491 as applied to claim 6 above, and further in view of (no secondary reference). (Office Action dated 6/9/2006, page 5) Applicants respectfully traverse this rejection.

In making the rejection, the Examiner states “Budinger teaches (col. 15, line 35 – col. 16 line 1) that the alloy would contain 2.5 to 5.5 wt% W, 0 to 1 wt% B and 0.1 wt% C, which overlaps with the claimed ranges.” (Office Action dated 6/9/2006, page 5)

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Budinger teaches a series of brazing superalloy materials. (see Abstract)

Budinger teaches three different compositions as follows:

a) a high melt component having at least one metallic powder consisting essentially of, by weight, about 4 to about 18.5 percent cobalt, about 4.5 to about 14 percent chromium, about 3 to about 6.2 percent aluminum, 0 to about 5 percent titanium, 0 to about 4 percent molybdenum, about 3.8 to about 13.7 percent tantalum, about 4 to about 11 percent tungsten, 0 to about 0.5 percent niobium, 0 to about 12 percent rhenium, 0 to about 1.55 percent hafnium, 0 to about 0.3 percent yttrium, boron and silicon only as incidental impurities, with the balance being nickel and other incidental impurities;

b) a low melt component having at least one metallic powder consisting essentially of, by weight, about 3.9 to about 25 percent cobalt, about 4.6 to about 22 percent chromium, 0 to about 12.2 percent aluminum, 0 to about 11.5 percent titanium, 0 to about 2 percent molybdenum, 0 to about 5.4 percent tantalum, 0 to about 7 percent tungsten, 0 to about 3 percent niobium, 0 to about 1.5 percent rhenium, 0 to about 1.1 percent hafnium, 0 to about 10 percent silicon, 0 to about 2.3 percent boron, wherein the total amount of silicon plus boron is at least 0.5 percent, with the balance being nickel and incidental impurities;

and a mixture of a) and b) termed c) below:

c) the high melt component and the low melt component together comprise a bulk composition range consisting essentially of, by weight, about 3 to about 13.5 percent cobalt, about 2.8 to about 15 percent chromium, about 3 to about 7.5 percent aluminum, 0 to about 5 percent titanium, 0 to about 2.5 percent molybdenum, about 2.5 to about 6.9 percent tantalum,

about 3 to about 8 percent tungsten, 0 to about 1.5 percent niobium, 0 to about 6 percent rhenium, 0 to about 1.5 percent hafnium, 0 to about 2.2 percent silicon, 0 to about 1 percent boron, with the balance being nickel and incidental impurities; wherein the bulk composition range comprises less than about 2.2 total weight percent of elements selected from the group consisting of boron and silicon

It is to be noted that all of these compositions disclosed by Budinger do not teach zirconium and do not teach an aluminum to titanium atomic ratio of 0.5 to 1.5. Budinger therefore does not teach all elements of the claimed invention.

Since Budinger does not teach all elements of the claimed invention there is no motivation for one of ordinary skill in the art to modify Budinger. In addition, since Budinger teaches three different compositions, one of ordinary skill in the art would not know which of Budinger's compositions to modify to arrive at the claimed invention. The brazing compositions at which Budinger's compositions are directed contain silicon so as to be capable of being brazed at low temperatures. One of ordinary skill upon reading of Budinger's objectives would not seek to modify this reference to arrive at the claimed invention.

Since Budinger does not teach all elements of the claimed composition and since there is no motivation to modify Budinger, the Examiner has not made a *prima facie* case of obviousness over Budinger. Applicants respectfully request a withdrawal of the obviousness rejection over Budinger and an allowance of the claims.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the objection(s) and rejection(s) and allowance of the case are respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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